

## EAST Search History

| Ref # | Hits    | Search Query              | DBs                | Default Operator | Plurals | Time Stamp       |
|-------|---------|---------------------------|--------------------|------------------|---------|------------------|
| L1    | 790     | (546/114).CCLS.           | US-PGPUB;<br>USPAT | OR               | OFF     | 2006/10/14 14:25 |
| L2    | 14      | comphorsulfonic           | US-PGPUB;<br>USPAT | OR               | ON      | 2006/10/14 14:25 |
| L3    | 2547535 | s l1 and l2               | US-PGPUB;<br>USPAT | OR               | ON      | 2006/10/14 14:25 |
| L4    | 0       | l1 and l2                 | US-PGPUB;<br>USPAT | OR               | ON      | 2006/10/14 14:25 |
| L5    | 8182    | camphorsulfonic           | US-PGPUB;<br>USPAT | OR               | ON      | 2006/10/14 14:25 |
| L6    | 72      | l1 and l5                 | US-PGPUB;<br>USPAT | OR               | ON      | 2006/10/14 14:26 |
| L7    | 1666    | clopidogrel               | US-PGPUB;<br>USPAT | OR               | ON      | 2006/10/14 14:26 |
| L8    | 18      | l6 and l7                 | US-PGPUB;<br>USPAT | OR               | ON      | 2006/10/14 14:27 |
| L9    | 50      | keshava and murthy        | US-PGPUB;<br>USPAT | OR               | ON      | 2006/10/14 14:27 |
| L10   | 3       | elena and bejan           | US-PGPUB;<br>USPAT | OR               | ON      | 2006/10/14 14:27 |
| L11   | 19      | gamini and weeratunga     | US-PGPUB;<br>USPAT | OR               | ON      | 2006/10/14 14:28 |
| L12   | 4       | l7 and (l9 or l10 or l11) | US-PGPUB;<br>USPAT | OR               | ON      | 2006/10/14 14:29 |
| L13   | 2       | l12 and l5                | US-PGPUB;<br>USPAT | OR               | ON      | 2006/10/14 14:29 |

L46 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:735379 CAPLUS

DOCUMENT NUMBER: 143:211890

TITLE: Resolution of methyl 2-(4,5,6,7-tetrahydrothieno[3,2-c]pyridin-5-yl)-2-(2-chlorophenyl)acetate by diastereomeric crystallization using single optically active resolving agent

INVENTOR(S): Murthy, K. S. Keshava; Bejan, Elena; Weeratunga, Gamini

PATENT ASSIGNEE(S): Brantford Chemicals Inc., Can.

SOURCE: U.S. Pat. Appl. Publ., 8 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.    | KIND   | DATE     | APPLICATION NO. | DATE         |
|---------------|--|----------|-----------------|--------------|
| US 2005176960 | A1   | 20050811 | US 2004-779724  | 20040218 <-- |
| CA 2457459    | AA   | 20050811 | CA 2004-2457459 | 20040211     |
| AU 2005212390 | A1   | 20050825 | AU 2005-212390  | 20050210     |
| WO 2005077958 | A1   | 20050825 | WO 2005-CA168   | 20050210     |
| WO 2005077958 | C1   | 20060112 |                 |              |
| W:            | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, SM |          |                 |              |
| RW:           | BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG   |          |                 |              |

PRIORITY APPLN. INFO.: CA 2004-2457459 A 20040211  
WO 2005-CA168 W 20050210

IT 120202-70-2P, Methyl (R)-(4,5,6,7-tetrahydrothieno[3,2-c]pyridin-5-yl)(2-chlorophenyl)ethanoate (S)-10-camphorsulfonate

RL: PUR (Purification or recovery); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(racemization for preparation of desired diastereomer; resolution of Me 2-(4,5,6,7-tetrahydrothieno[3,2-c]pyridin-5-yl)-2-(2-chlorophenyl)acetate by diastereomeric crystallization using single

optically

active resolving agent)

RN 120202-70-2 CAPLUS

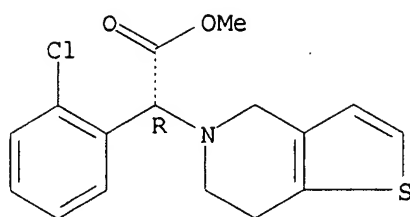
CN Thieno[3,2-c]pyridine-5(4H)-acetic acid,  $\alpha$ -(2-chlorophenyl)-6,7-dihydro-, methyl ester, ( $\alpha$ R)-, (1S)-7,7-dimethyl-2-oxobicyclo[2.2.1]heptane-1-methanesulfonate (9CI) (CA INDEX NAME)

CM 1

CRN 120202-69-9

CMF C16 H16 Cl N O2 S

Absolute stereochemistry. Rotation (-).

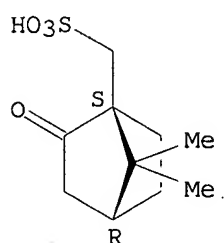


CM 2

CRN 3144-16-9

CMF C10 H16 O4 S

Absolute stereochemistry. Rotation (+).



IT 862163-72-2P, Methyl (S)-(4,5,6,7-tetrahydrothieno[3,2-c]pyridin-5-yl)(2-chlorophenyl)ethanoate (S)-10-camphorsulfonate  
 RL: PUR (Purification or recovery); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (resolution of Me 2-(4,5,6,7-tetrahydrothieno[3,2-c]pyridin-5-yl)-2-(2-chlorophenyl)acetate by diastereomeric crystallization using single optically

active resolving agent)

RN 862163-72-2 CAPLUS

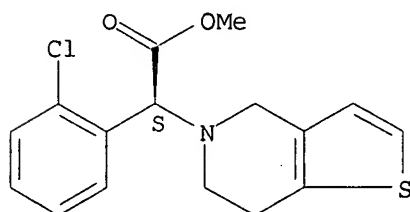
CN Thieno[3,2-c]pyridine-5(4H)-acetic acid,  $\alpha$ -(2-chlorophenyl)-6,7-dihydro-, methyl ester, ( $\alpha$ S)-, (1S,4R)-7,7-dimethyl-2-oxobicyclo[2.2.1]heptane-1-methanesulfonate (9CI) (CA INDEX NAME)

CM 1

CRN 113665-84-2

CMF C16 H16 Cl N O2 S

Absolute stereochemistry. Rotation (+).

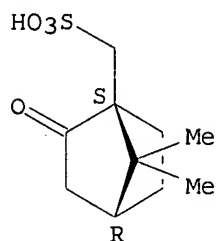


CM 2

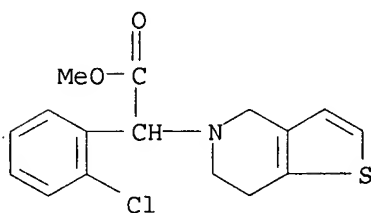
CRN 3144-16-9

CMF C10 H16 O4 S

Absolute stereochemistry. Rotation (+).



IT 90055-48-4, Methyl 2-(4,5,6,7-tetrahydrothieno[3,2-c]pyridin-5-yl)-2-(2-chlorophenyl)acetate  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (resolution of Me 2-(4,5,6,7-tetrahydrothieno[3,2-c]pyridin-5-yl)-2-(2-chlorophenyl)acetate by diastereomeric crystallization using single optically active resolving agent)  
 RN 90055-48-4 CAPLUS  
 CN Thieno[3,2-c]pyridine-5(4H)-acetic acid,  $\alpha$ -(2-chlorophenyl)-6,7-dihydro-, methyl ester (9CI) (CA INDEX NAME)



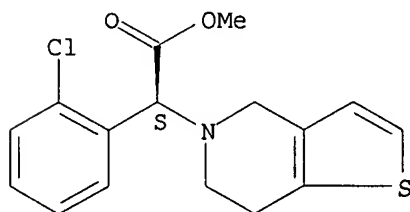
IT 120202-66-6P, Methyl (S)-(4,5,6,7-tetrahydrothieno[3,2-c]pyridin-5-yl)(2-chlorophenyl)ethanoate hydrogen sulfate  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (resolution of Me 2-(4,5,6,7-tetrahydrothieno[3,2-c]pyridin-5-yl)-2-(2-chlorophenyl)acetate by diastereomeric crystallization using single optically active resolving agent)  
 RN 120202-66-6 CAPLUS  
 CN Thieno[3,2-c]pyridine-5(4H)-acetic acid,  $\alpha$ -(2-chlorophenyl)-6,7-dihydro-, methyl ester, ( $\alpha$ S)-, sulfate (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 113665-84-2

CMF C16 H16 Cl N O2 S

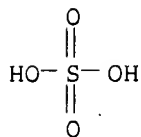
Absolute stereochemistry. Rotation (+).



CM 2

CRN 7664-93-9

CMF H2 O4 S

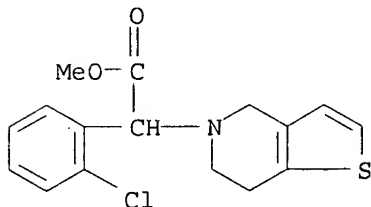


IT 140623-72-9P, Methyl 2-(4,5,6,7-tetrahydrothieno[3,2-c]pyridin-5-yl)-2-(2-chlorophenyl)acetate (S)-10-camphorsulfonate  
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process) (resolution; resolution of Me  
2-(4,5,6,7-tetrahydrothieno[3,2-c]pyridin-5-yl)-  
2-(2-chlorophenyl)acetate by diastereomeric crystallization using single optically active resolving agent)  
RN 140623-72-9 CAPLUS  
CN Thieno[3,2-c]pyridine-5(4H)-acetic acid,  $\alpha$ -(2-chlorophenyl)-6,7-dihydro-, methyl ester, (1S,4R)-7,7-dimethyl-2-oxobicyclo[2.2.1]heptane-1-methanesulfonate (9CI) (CA INDEX NAME)

CM 1

CRN 90055-48-4

CMF C16 H16 Cl N O2 S

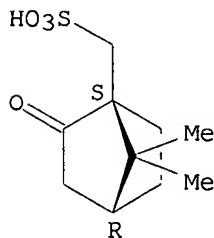


CM 2

CRN 3144-16-9

CMF C10 H16 O4 S

Absolute stereochemistry. Rotation (+).



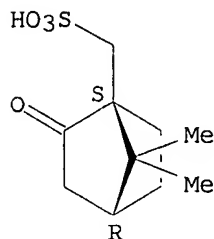
IT 3144-16-9, (S)-10-Camphorsulfonic acid  
RL: NUU (Other use, unclassified); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)  
(resolving agent; resolution of Me 2-(4,5,6,7-tetrahydrothieno[3,2-

c]pyridin-5-yl)-2-(2-chlorophenyl)acetate by diastereomeric crystallization using single optically active resolving agent)

RN 3144-16-9 CAPLUS

CN Bicyclo[2.2.1]heptane-1-methanesulfonic acid, 7,7-dimethyl-2-oxo-, (1S,4R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



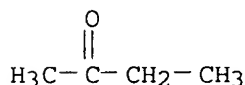
IT 78-93-3, Methyl ethyl ketone, uses 108-10-1, Methyl isobutyl ketone 108-88-3, Toluene, uses

RL: NUU (Other use, unclassified); USES (Uses)

(solvent; resolution of Me 2-(4,5,6,7-tetrahydrothieno[3,2-c]pyridin-5-yl)-2-(2-chlorophenyl)acetate by diastereomeric crystallization using single optically active resolving agent)

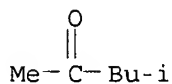
RN 78-93-3 CAPLUS

CN 2-Butanone (8CI, 9CI) (CA INDEX NAME)



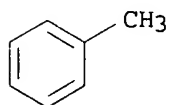
RN 108-10-1 CAPLUS

CN 2-Pentanone, 4-methyl- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 108-88-3 CAPLUS

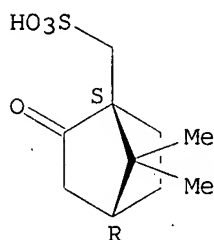
CN Benzene, methyl- (9CI) (CA INDEX NAME)



L52 ANSWER 1 OF 9 CA COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 145:83300 CA  
 TITLE: Process for preparation of clopidogrel and its salt  
 INVENTOR(S): Mao, Haifang; Pan, Xianhua; Lu, Jiaqing  
 PATENT ASSIGNEE(S): Shanghai Institute of Technology, Peop. Rep. China  
 SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 7 pp.  
 CODEN: CNXXEV  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Chinese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

| PATENT NO.   | KIND | DATE     | APPLICATION NO.  | DATE     |
|--|------|----------|------------------|----------|
| CN 1775782   | A    | 20060524 | CN 2005-10111562 | 20051215 |
| PRIORITY APPLN. INFO.:   |      |          | CN 2005-10111562 | 20051215 |
| IT 3144-16-9, Camphorsulfonic acid   |      |          |                  |          |
| RL: RCT (Reactant); RACT (Reactant or reagent)<br>(preparation of clopidogrel and its salt)              |      |          |                  |          |
| RN 3144-16-9 CA  |      |          |                  |          |
| CN Bicyclo[2.2.1]heptane-1-methanesulfonic acid, 7,7-dimethyl-2-oxo-,<br>(1S,4R) - (9CI) (CA INDEX NAME) |      |          |                  |          |

Absolute stereochemistry. Rotation (+).



L52 ANSWER 2 OF 9 CA COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 143:211890 CA  
 TITLE: Resolution of methyl 2-(4,5,6,7-tetrahydrothieno[3,2-c]pyridin-5-yl)-2-(2-chlorophenyl)acetate by diastereomeric crystallization using single optically active resolving agent  
 INVENTOR(S): Murthy, K. S. Keshava; Bejan, Elena; Weeratunga, Gamini  
 PATENT ASSIGNEE(S): Brantford Chemicals Inc., Can.  
 SOURCE: U.S. Pat. Appl. Publ., 8 pp.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

| PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE     |
|---------------|------|----------|-----------------|----------|
| US 2005176960 | A1   | 20050811 | US 2004-779724  | 20040218 |
| CA 2457459    | AA   | 20050811 | CA 2004-2457459 | 20040211 |
| AU 2005212390 | A1   | 20050825 | AU 2005-212390  | 20050210 |
| WO 2005077958 | A1   | 20050825 | WO 2005-CA168   | 20050210 |
| WO 2005077958 | C1   | 20060112 |                 |          |

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,

GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, SM  
 RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.:

CA 2004-2457459

A 20040211

WO 2005-CA168

W 20050210

IT 3144-16-9, (S)-10-Camphorsulfonic acid

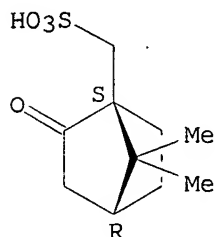
RL: NUU (Other use, unclassified); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)

(resolving agent; resolution of Me 2-(4,5,6,7-tetrahydrothieno[3,2-c]pyridin-5-yl)-2-(2-chlorophenyl)acetate by diastereomeric crystallization using single optically active resolving agent)

RN 3144-16-9 CA

CN Bicyclo[2.2.1]heptane-1-methanesulfonic acid, 7,7-dimethyl-2-oxo-, (1S,4R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L52 ANSWER 3 OF 9 CA COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER:

142:316818 CA

TITLE:

Process for the recovery of (S)-(+)-methyl (2-chlorophenyl)- (6,7-dihydro-4H-thieno[3,2-c]pyridin-5-yl)acetate hydrogen sulfate (clopidogrel bisulfate) from its (R) and mixture of (R) and (S)-isomers

INVENTOR(S):

Reddy, Manne Satyanarayana; Eswaraiah, Sajja; Reddy, Anumula Raghupathi; Sampath, Alla

PATENT ASSIGNEE(S):

Reddy's Laboratories Limited, India; Reddy's Laboratories, Inc.

SOURCE:

U.S. Pat. Appl. Publ., 7 pp.

CODEN: USXXCO

DOCUMENT TYPE:

Patent

LANGUAGE:

English

FAMILY ACC. NUM. COUNT:

1

PATENT INFORMATION:

| PATENT NO.             | KIND | DATE     | APPLICATION NO.                        | DATE       |
|------------------------|------|----------|--|------------|
| US 2005059696          | A1   | 20050317 | US 2004-842702                         | 20040510   |
| PRIORITY APPLN. INFO.: |      |          | IN 2003-MA389                          | A 20030508 |
| OTHER SOURCE(S):       |      |          | CASREACT 142:316818; MARPAT 142:316818 |            |

IT 3144-16-9, (+)-Camphorsulfonic acid

RL: RCT (Reactant); RACT (Reactant or reagent)

(process for recovery of clopidogrel bisulfate from its (R) and mixture of (R) and (S)-isomers by racemization and optical resolution)

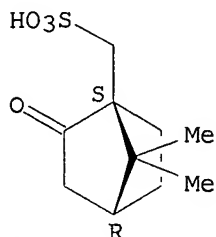
RN 3144-16-9 CA

CN Bicyclo[2.2.1]heptane-1-methanesulfonic acid, 7,7-dimethyl-2-oxo-,



(1S,4R) - (9CI) (CA INDEX NAME)

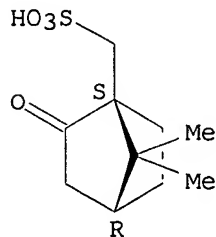
Absolute stereochemistry. Rotation (+).



L52 ANSWER 4 OF 9 CA COPYRIGHT 2006 ACS on STN  
ACCESSION NUMBER: 141:59670 CA  
TITLE: A novel polymorph of clopidogrel hydrogen sulfate and pharmaceutical composition containing it  
INVENTOR(S): Narasa, Reddy Attunuri; Nagi, Reddy Bheemavarapu; Ratnakar, Kura Reddy; Raji, Reddy Rapolu  
PATENT ASSIGNEE(S): Hetero Drugs Limited, India  
SOURCE: PCT Int. Appl., 18 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

| PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE       |
|---|------|----------|-----------------|------------|
| WO 2004052966   | A1   | 20040624 | WO 2002-IN231   | 20021209   |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW |      |          |                 |            |
| RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG  |      |          |                 |            |
| AU 2002356430   | A1   | 20040630 | AU 2002-356430  | 20021209   |
| PRIORITY APPLN. INFO.:  |      |          | WO 2002-IN231   | A 20021209 |
| IT 3144-16-9, Camphorsulfonic acid  |      |          |                 |            |
| RL: REM (Removal or disposal); PROC (Process)   |      |          |                 |            |
| (novel polymorph of clopidogrel hydrogen sulfate and pharmaceutical composition containing it)  |      |          |                 |            |
| RN 3144-16-9 CA   |      |          |                 |            |
| CN Bicyclo[2.2.1]heptane-1-methanesulfonic acid, 7,7-dimethyl-2-oxo-, (1S,4R) - (9CI) (CA INDEX NAME)   |      |          |                 |            |

Absolute stereochemistry. Rotation (+).



L52 ANSWER 5 OF 9 CA COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 137:140508 CA

TITLE: Process for preparing clopidogrel and  
analogues via synthesis and/or resolution of  
corresponding acetamide and acetonitrile derivatives  
INVENTOR(S): Pandey, Bipin; Lohray, Vidya Bhushan; Lohray, Braj  
Bhushan

PATENT ASSIGNEE(S): Cadila Healthcare Limited, India

SOURCE: PCT Int. Appl., 41 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.             | KIND   | DATE     | APPLICATION NO. | DATE       |
|------------------------|--|----------|-----------------|------------|
| WO 2002059128          | A2   | 20020801 | WO 2002-IN12    | 20020121   |
| WO 2002059128          | A3   | 20021219 |                 |            |
| W:                     | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW |          |                 |            |
| RW:                    | GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG   |          |                 |            |
| IN 191030              | A  | 20030913 | IN 2001-MU84    | 20010124   |
| US 2002177712          | A1   | 20021128 | US 2001-54101   | 20011022   |
| US 6635763             | B2   | 20031021 |                 |            |
| CA 2436323             | AA   | 20020801 | CA 2002-2436323 | 20020121   |
| EP 1353928             | A2   | 20031022 | EP 2002-710298  | 20020121   |
| R:                     | AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR   |          |                 |            |
| BR 2002007064          | A  | 20040330 | BR 2002-7064    | 20020121   |
| JP 2004522744          | T2   | 20040729 | JP 2002-559430  | 20020121   |
| IN 194223              | A  | 20041002 | IN 2003-MN23    | 20030108   |
| IN 194222              | A  | 20041002 | IN 2003-MN24    | 20030108   |
| IN 194224              | A  | 20041002 | IN 2003-MN26    | 20030108   |
| IN 194221              | A  | 20041002 | IN 2003-MN27    | 20030108   |
| IN 194507              | A  | 20041113 | IN 2003-MU25    | 20030108   |
| NO 2003002898          | A  | 20030903 | NO 2003-2898    | 20030624   |
| ZA 2003004895          | A  | 20040512 | ZA 2003-4895    | 20030624   |
| PRIORITY APPLN. INFO.: |  |          | IN 2001-MU84    | A 20010124 |
|                        |  |          | US 2001-54101   | A 20011022 |
|                        |  |          | US 2001-54120   | A 20011022 |
|                        |  |          | WO 2002-IN12    | W 20020121 |

OTHER SOURCE(S): CASREACT 137:140508; MARPAT 137:140508

IT 3144-16-9, (1S)-(+)-Camphor-10-sulfonic acid

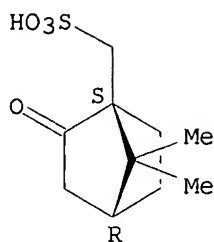
RL: RCT (Reactant); RACT (Reactant or reagent)

(resolving agent; improved process for preparation of clopidogrel  
and analogues via synthesis and/or resolution of corresponding acetamide and  
acetonitrile derivs.)

RN 3144-16-9 CA

CN Bicyclo[2.2.1]heptane-1-methanesulfonic acid, 7,7-dimethyl-2-oxo-,  
(1S,4R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L52. ANSWER 6 OF 9 CA COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 130:25057 CA

TITLE: New process for preparation of methyl  
(2-halophenyl) (6,7-dihydro-4H-thieno[3,2-c]pyridin-5-  
yl)acetates with antithrombotic activity

INVENTOR(S): Bakonyi, Maria; Csatari Nagy, Marianna; Molnar,  
Levente, Mrs.; Gajary, Antal; Alattyani, Edit

PATENT ASSIGNEE(S): Sanofi, Fr.

SOURCE: PCT Int. Appl., 24 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

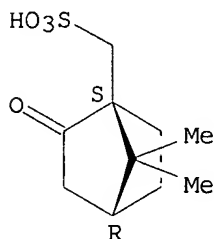
PATENT INFORMATION:

| PATENT NO.  | KIND | DATE     | APPLICATION NO.  | DATE     |
|---|------|----------|------------------|----------|
| WO 9851689  | A1   | 19981119 | WO 1998-HU48     | 19980511 |
| W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW |      |          |                  |          |
| RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG  |      |          |                  |          |
| HR 980240   | B1   | 20030228 | HR 1998-980240   | 19980506 |
| ZA 9803921  | A    | 19981109 | ZA 1998-3921     | 19980508 |
| IN 193570   | A    | 20040724 | IN 1998-DE1229   | 19980508 |
| CA 2289623  | AA   | 19981119 | CA 1998-2289623  | 19980511 |
| AU 9874448  | A1   | 19981208 | AU 1998-74448    | 19980511 |
| AU 735702   | B2   | 20010712 |                  |          |
| EP 981529   | A1   | 20000301 | EP 1998-921670   | 19980511 |
| EP 981529   | B1   | 20020116 |                  |          |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI   |      |          |                  |          |
| TR 9902783  | T2   | 20000421 | TR 1999-2783     | 19980511 |
| EE 9900488  | A    | 20000615 | EE 1999-488      | 19980511 |
| EE 3925   | B1   | 20021216 |                  |          |
| BR 9809112  | A    | 20000801 | BR 1998-9112     | 19980511 |
| RU 2172315  | C1   | 20010820 | RU 1999-126506   | 19980511 |
| NZ 501577   | A    | 20011026 | NZ 1998-501577   | 19980511 |
| JP 2001525819   | T2   | 20011211 | JP 1998-548956   | 19980511 |
| AT 212025   | E    | 20020215 | AT 1998-921670   | 19980511 |
| PT 981529   | T    | 20020628 | PT 1998-921670   | 19980511 |
| ES 2172141  | T3   | 20020916 | ES 1998-921670   | 19980511 |
| CN 1109036  | B    | 20030521 | CN 1998-805036   | 19980511 |
| SK 283700   | B6   | 20031202 | SK 1999-1516     | 19980511 |
| CZ 292820   | B6   | 20031217 | CZ 1999-3939     | 19980511 |
| EG 21973  | A    | 20020531 | EG 1998-520      | 19980512 |
| TW 552263   | B    | 20030911 | TW 1998-87109424 | 19980612 |
| NO 9905533  | A    | 19991213 | NO 1999-5533     | 19991112 |

|                        |    |          |                |            |
|------------------------|----|----------|----------------|------------|
| MX 9910434             | A  | 20000831 | MX 1999-10434  | 19991112   |
| US 6180793             | B1 | 20010130 | US 1999-423549 | 19991112   |
| HK 1027350             | A1 | 20031017 | HK 2000-106408 | 20001010   |
| PRIORITY APPLN. INFO.: |    |          | HU 1997-885    | A 19970513 |
|                        |    |          | WO 1998-HU48   | W 19980511 |

OTHER SOURCE(S): MARPAT 130:25057  
 IT 3144-16-9, (1S)-(+)-Camphor-10-sulfonic acid  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (resolving agent; improved preparation of clopidogrel and analogs  
 via (thienylethylamino)(halophenyl)acetamides and -acetates)  
 RN 3144-16-9 CA  
 CN Bicyclo[2.2.1]heptane-1-methanesulfonic acid, 7,7-dimethyl-2-oxo-,  
 (1S,4R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L52 ANSWER 7 OF 9 CA COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 130:24964 CA  
 TITLE: New 2-[(2-thienyl)ethylamino](2-halophenyl)acetonitrile intermediates for clopidogrel and analogs, and process for their preparation  
 INVENTOR(S): Heymes, Alain; Castro, Bertrand; Bakonyi, Maria; Csatari Nagy, Marianna; Molnar, Levente, Mrs.  
 PATENT ASSIGNEE(S): Sanofi, Fr.  
 SOURCE: PCT Int. Appl., 26 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

| PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE     |
|---|------|----------|-----------------|----------|
| WO 9851682  | A1   | 19981119 | WO 1998-HU46    | 19980511 |
| W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW |      |          |                 |          |
| RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG  |      |          |                 |          |
| CA 2288637  | AA   | 19981119 | CA 1998-2288637 | 19980511 |
| CA 2288637  | C    | 20051115 |                 |          |
| AU 9874446  | A1   | 19981208 | AU 1998-74446   | 19980511 |
| EP 981525   | A1   | 20000301 | EP 1998-921668  | 19980511 |
| EP 981525   | B1   | 20040128 |                 |          |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI   |      |          |                 |          |

|               |    |          |                |          |
|---------------|----|----------|----------------|----------|
| BR 9809113    | A  | 20000801 | BR 1998-9113   | 19980511 |
| JP 2001525817 | T2 | 20011211 | JP 1998-548954 | 19980511 |
| AT 258551     | E  | 20040215 | AT 1998-921668 | 19980511 |
| PT 981525     | T  | 20040531 | PT 1998-921668 | 19980511 |
| ES 2213900    | T3 | 20040901 | ES 1998-921668 | 19980511 |
| NO 9905531    | A  | 19991213 | NO 1999-5531   | 19991112 |
| MX 9910431    | A  | 20000831 | MX 1999-10431  | 19991112 |
| US 6215005    | B1 | 20010410 | US 2000-423548 | 20000503 |

PRIORITY APPLN. INFO.:

|              |   |          |
|--------------|---|----------|
| HU 1997-886  | A | 19970513 |
| WO 1998-HU46 | W | 19980511 |

OTHER SOURCE(S): MARPAT 130:24964

IT 3144-16-9, (1S)-(+)-Camphor-10-sulfonic acid

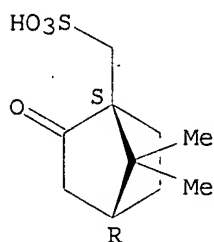
RL: RCT (Reactant); RACT (Reactant or reagent)

(resolving agent; preparation of (thienylethylamino) (halophenyl)acetonitrile  
s as new intermediates for clopidogrel and analogs)

RN 3144-16-9 CA

CN Bicyclo[2.2.1]heptane-1-methanesulfonic acid, 7,7-dimethyl-2-oxo-,  
(1S,4R) - (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L52 ANSWER 8 OF 9 CA COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 130:24963 CA

TITLE: New 2-[(2-thienyl)ethylamino] (2-halophenyl)acetamide  
intermediates for clopidogrel and analogs,  
and process for their preparation

INVENTOR(S): Bakonyi, Maria; Csatari Nagy, Marianna; Molnar,  
Levente, Mrs.; Makovi, Zoltan; Jobb, Piroska; Bai,  
Tibor, Mrs.

PATENT ASSIGNEE(S): Sanofi, Fr.

SOURCE: PCT Int. Appl., 24 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

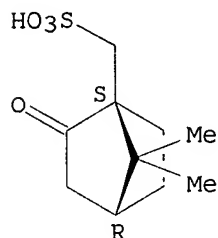
PATENT INFORMATION:

| PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE     |
|---|------|----------|-----------------|----------|
| WO 9851681  | A1   | 19981119 | WO 1998-HU47    | 19980511 |
| W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM |      |          |                 |          |
| RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG  |      |          |                 |          |
| CA 2289545  | AA   | 19981119 | CA 1998-2289545 | 19980511 |
| AU 9874447  | A1   | 19981208 | AU 1998-74447   | 19980511 |

EP 981524 A1 20000301 EP 1998-921669 19980511  
 EP 981524 B1 20030423  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, FI  
 BR 9809111 A 20000801 BR 1998-9111 19980511  
 JP 2001525818 T2 20011211 JP 1998-548955 19980511  
 AT 238294 E 20030515 AT 1998-921669 19980511  
 PT 981524 T 20030829 PT 1998-921669 19980511  
 ES 2195335 T3 20031201 ES 1998-921669 19980511  
 NO 9905532 A 19991213 NO 1999-5532 19991112  
 MX 9910433 A 20000630 MX 1999-10433 19991112  
 US 6258961 B1 20010710 US 1999-423801 19991112  
 PRIORITY APPLN. INFO.: HU 1997-884 A 19970513  
 WO 1998-HU47 W 19980511

OTHER SOURCE(S): CASREACT 130:24963; MARPAT 130:24963  
 IT 3144-16-9, (1S)-(+)-Camphor-10-sulfonic acid  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (resolving agent; preparation of (thienylethylamino)(halophenyl)acetamides  
 as new intermediates for clopidogrel and analogs)  
 RN 3144-16-9 CA  
 CN Bicyclo[2.2.1]heptane-1-methanesulfonic acid, 7,7-dimethyl-2-oxo-,  
 (1S,4R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L52 ANSWER 9 OF 9 CA COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 116:194139 CA  
 TITLE: Isopropyl 2-thienylglycidate, process for its  
 preparation, and its use as synthetic intermediate for  
 ticlopidine and clopidogrel  
 INVENTOR(S): Bousquet, Andre; Calet, Serge; Heymes, Alain  
 PATENT ASSIGNEE(S): Sanofi SA, Fr.  
 SOURCE: Eur. Pat. Appl., 11 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: French  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

| PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE     |
|---|------|----------|-----------------|----------|
| EP 465358   | A1   | 19920108 | EP 1991-401833  | 19910703 |
| EP 465358   | B1   | 19960207 |                 |          |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE |      |          |                 |          |
| FR 2664276  | A1   | 19920110 | FR 1990-8482    | 19900704 |
| FR 2664276  | B1   | 19921023 |                 |          |
| US 5132435  | A    | 19920721 | US 1991-724988  | 19910702 |
| CA 2046126  | AA   | 19920105 | CA 1991-2046126 | 19910703 |
| CA 2046126  | C    | 20011120 |                 |          |
| JP 04261174   | A2   | 19920917 | JP 1991-162859  | 19910703 |

|                        |                   |          |                |            |
|------------------------|-------------------|----------|----------------|------------|
| JP 3055819             | B2                | 20000626 |                |            |
| HU 61754               | A2                | 19930301 | HU 1991-2250   | 19910703   |
| HU 213397              | B                 | 19970630 |                |            |
| AT 133950              | E                 | 19960215 | AT 1991-401833 | 19910703   |
| ES 2083542             | T3                | 19960416 | ES 1991-401833 | 19910703   |
| PRIORITY APPLN. INFO.: |                   |          | FR 1990-8482   | A 19900704 |
| OTHER SOURCE(S):       | MARPAT 116:194139 |          |                |            |
| IT 3144-16-9           |                   |          |                |            |

RL: RCT (Reactant); RACT (Reactant or reagent)

(resolution by, of thienopyridyl(chlorophenyl)acetate derivative, in preparation of  
clopidogrel)

RN 3144-16-9 CA

CN Bicyclo[2.2.1]heptane-1-methanesulfonic acid, 7,7-dimethyl-2-oxo-,  
(1S,4R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

